

In re Patent Application of:

OCKENFUSS ET AL.

Serial No. 10/785,384

Filed: 02/23/2004

Amendments to the Claims

1. (currently amended) An infrared filter comprising:
a substrate; and
an optical filter stack disposed on a first surface of the substrate, the optical filter stack including
a plurality of dielectric layers, and
a plurality of metal layers alternating with the dielectric layers, wherein the plurality of metal layers comprises at least four metal layers, and
wherein the infrared filter obtains an average transmission greater than or equal to 75% between 400 nm and 600 nm, and
wherein the dielectric layers comprise Nb₂O₅ and the metal layers comprise silver.

2. (currently amended) The infrared filter of claim 1 ~~wherein the metal layers comprise silver and further comprising a plurality of corrosion suppression layers disposed between the dielectric layers and the metal layers.~~

3. (original) The infrared filter of claim 2 wherein the metal layers comprise a first metal having a first galvanic potential and the corrosion suppression layers include a second metal having a second galvanic potential, the second galvanic potential being greater than the first galvanic potential.

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4. (original) The infrared filter of claim 1 wherein the average transmission is not less than 80% between 400 nm and 600 nm.

5. (cancelled)

6. (currently amended) The infrared filter of claim ~~5~~ 1 further comprising a plurality of ZnO layers, each ZnO layer in the plurality disposed between a dielectric layer ~~the Nb₂O₅ layers~~ and ~~the~~ a metal layer ~~layers~~.

7. (original) The infrared filter of claim 6 wherein each of the plurality of ZnO layers is about 1-10 nm thick.

8. (previously amended) The infrared filter of claim 1 comprising a transmission-enhancing coating disposed on a second surface of the substrate, wherein the transmission-enhancing coating is an anti-reflective coating.

9. (previously amended) The infrared filter of claim 1 further comprising a transmission-enhancing coating and a blur filter, the blur filter disposed between the transmission-enhancing coating and a second surface of the substrate.

10. (original) The infrared filter of claim 1 wherein the substrate comprises a birefringent material.

11. (original) The infrared filter of claim 1 wherein the infrared filter comprises a lid to a photodetector assembly, a photodetector array being disposed inside a package of the photodetector assembly.

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Claims 12-21 (cancelled).

22. (currently amended) An ~~optical~~ infrared filter as defined in claim 1, wherein a first corrosion-suppressing layer separates one of the dielectric layers from a metal layer, and wherein a second corrosion-suppressing layer separates another of the dielectric layers from said metal layer.

23. (currently amended) An infrared filter comprising:
 a substrate; and
 an optical filter stack disposed on a first surface of
the substrate, the optical filter stack including
 a plurality of dielectric layers,
 a plurality of metal layers alternating with the
dielectric layers, and
 a plurality of corrosion suppression layers, the
plurality of corrosion suppression layers including a first
corrosion-suppressing layer separating one of the dielectric
layers in the plurality of dielectric layers from a metal
layer in the plurality of metal layers, and a second
corrosion-suppressing layer separating another of the
dielectric layers in the plurality of dielectric layers from
said metal layer,
 wherein the plurality of metal layers comprises at least
four metal layers,
 wherein the infrared filter obtains an average
transmission greater than or equal to 75% between 400 nm and
600 nm, and
An optical filter as defined in claim 22,

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wherein the ~~stack of layers are~~ optical filter stack includes a stack of the form D1/C1/M1/C2/D2, wherein D1 is a first dielectric layer, C1 is a the first corrosion-suppressing layer, M1 is a ~~first said~~ metal layer, ~~C2, is a~~ C2 is the second corrosion-suppressing layer, D2 is a second dielectric layer.

24. (currently amended) The infrared filter of claim 22 23 wherein the dielectric layers comprise Nb₂O₅.

25. (currently amended) The infrared filter of claim 22 23 wherein the metal layers comprise silver.

26. (previously presented) The infrared filter of claim 23 wherein the first corrosion-suppressing layer and the second corrosion-suppressing layer comprise a metal oxide.

27. (currently amended) The infrared filter of claim 26 wherein the metal oxide is zinc oxide.

28. (previously presented) The infrared filter of claim 27 wherein each of the plurality of ZnO layers is about 1-10 nm thick.

29. (currently amended) The infrared filter of claim 26 wherein the first corrosion-suppressing layer is less than about 10 nm thick.

30. (currently amended) The infrared filter of claim 22 23 wherein the metal layer is a silver or silver alloy layer.

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31. (currently amended) The infrared filter of claim 22 23 wherein the metal layer is less than 25 nm thick.

32. (previously presented) The infrared filter of claim 23 wherein the second corrosion-suppressing layer includes a metal portion on the metal layer M1, and a metal-oxide portion on the metal portion of the second corrosion-suppressing layer.

33. (currently amended) The infrared filter of claim ~~22~~ 23, wherein the infrared filter has been thermally treated at a temperature above 200C.

34. (currently amended) The infrared filter of claim ~~22~~ 23, wherein the infrared filter has a low wavelength shift with changes in angle of incidence.

35. (cancelled)

36. (new) An infrared filter comprising:
a substrate; and
an optical filter stack disposed on a first surface of the substrate, the optical filter stack including
a plurality of dielectric layers,
a plurality of metal layers alternating with the dielectric layers, and
a plurality of corrosion suppression layers disposed between the dielectric layers and the metal layers,
wherein the plurality of metal layers comprises at least four metal layers,

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wherein the infrared filter obtains an average transmission greater than or equal to 75% between 400 nm and 600 nm,

wherein the metal layers comprise a first metal having a first galvanic potential and the corrosion suppression layers include a second metal having a second galvanic potential, the second galvanic potential being greater than the first galvanic potential, and

wherein the metal layers comprise silver.